

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	§	Group Art Unit: 2163
Gregory H. Milby	§	
	§	
Serial No.: 10/804,793	§	
	§	Examiner: Le, Uyen T.
Filing Date: 03/19/04	§	
	§	
Title: Operation Control for	§	
Data Types	§	Attorney Docket No. 11351

MAIL STOP APPEAL BRIEF - PATENTS

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APPELLANT'S APPEAL BRIEF (37 C.F.R. § 41.37)

This brief is in support of Appellant's notice of appeal from the decision of the Examiner dated November 14, 2007.

REAL PARTY IN INTEREST

The real party in interest is:

Teradata US, Inc
1700 S. Patterson Blvd
Dayton, Ohio 45479

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences, to Appellants' knowledge.

STATUS OF CLAIMS

The application as originally filed contained 22 claims. Claim 8 was previously canceled. Claims 1-7 and 9-22 are pending. Claims 1-7 and 9-22 are appealed.

STATUS OF AMENDMENTS

No amendment has been filed subsequent to final rejection.

SUMMARY OF THE CLAIMED SUBJECT MATTER

Claim 1 features a method of controlling operations that may be performed on a user-defined type (UDT) in a database system. Page 2, lines 3-6; page 5, line 14 – page 8, line 15; Figs. 4-6. The UDT is derived from an underlying type having a set of underlying operations. Page 5, line 14 – page 6, line 9; Fig. 4. The method includes creating the UDT. Page 6, lines 1-2; Fig. 4, block 410. The method further includes selectively activating one or more underlying operations for the UDT. Page 6, line 10 – page 7, line 24, Fig. 4, element 430; Fig. 5.

Claim 9 features A computer program, stored on a tangible storage medium, for use in controlling operations that may be performed on a user-defined type (UDT) in a database system. Page 2, lines 3-6; page 5, line 14 – page 8, line 15; Figs. 4-6. The UDT is derived from an underlying type having a set of underlying operations. Page 5, line 14 – page 6, line 9; Fig. 4. The computer program includes executable instructions that cause a computer to create the UDT. Page 6, lines 1-2; Fig. 4, block 410. The computer program further includes executable instructions that cause a computer to selectively activate one or more underlying operations for the UDT. Page 6, line 10 – page 7, line 24, Fig. 4, element 430; Fig. 5.

Claim 16 features database system including a massively parallel processing system including one or more nodes. Page 3, lines 25-29; page 4, lines 13-14; Fig. 1, elements 100 and 105_{1...N}. The massively parallel processing system further includes a plurality of CPUs, each of the one or more nodes providing access to one or more CPUs. Page 3, line 29 – page 4, line 10; Fig. 1, elements 110_{1...N}. The massively parallel processing system further includes a plurality of data storage facilities each of the one or more CPUs providing access to one or more data storage facilities. Page 3, lines 29-31; page 4, lines 11-13. The massively parallel processing system further includes a process for execution on the massively parallel processing system for

controlling operations that may be performed on a user-defined type (UDT) in the database system. Page 2, lines 3-6; page 5, line 14 – page 8, line 15; Figs. 4-6. The UDT is derived from an underlying type having a set of underlying operations. Page 5, line 14 – page 6, line 9; Fig. 4. The process includes creating the UDT. Page 6, lines 1-2; Fig. 4, block 410. The process further includes selectively activating one or more underlying operations for the UDT. Page 6, line 10 – page 7, line 24, Fig. 4, element 430; Fig. 5.

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether claims 1-5, 9-13, and 16-20 are anticipated under 35 USC 102(b) by an article entitled “Composable Ada Software Components and the Re-Export Paradigm” by Bardin and Thompson (hereinafter “Bardin”).
2. Whether claims 6, 14, and 21 are obvious under 35 USC 103(a) over Bardin in view of United States Patent Publication 2006/0064412 (hereinafter “Cunningham”).
3. Whether claims 7, 15, and 22 are obvious under 35 USC 103(a) as being unpatentable over Bardin in view Cunningham.

ARGUMENT

1. The Bardin reference relates to the Ada programming language and does not teach or suggest creating a UDT in a database system, as required by independent claims 1, 9 and 16.

The Office Action rejected claims 1-5, 8-13, and 16-20 under 35 USC 102(b) as being anticipated by an article entitled “Composable Ada Software Components and the Re-Export Paradigm” by Bardin and Thompson (hereinafter “Bardin”). Claim 8 has been cancelled and its rejection is moot.

Appellant respectfully disagrees with regard to the remaining claims. Independent claims 1, 9, and 16 require “a user-defined type (UDT) in a database system” Bardin describes a re-export operation for the Ada programming language. The Ada programming language is not a database system.

When Appellant made this argument, the Examiner responded in the Advisory Action that:

the examiner does not equate the ADA programming language with a database system. It is the re-export operation for the ADA programming language described in Bardin that reads on the claimed method. The claimed database system merely corresponds to a system for performing the claimed method, thus was rejected for the same reasons.

In making this argument, the Examiner appears to have taken the position that the preamble of claims 1 and 9 are not limitations. However, as the Court of Appeals for the Federal Circuit recently summarized in *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 952 (Fed. Cir. 2006):

the preamble is regarded as limiting if it recites essential structure that is important to the invention or necessary to give meaning to the claim. *NTP, Inc. v. Research In Motion, Ltd.*, 418 F.3d 1282, 1305-06 (Fed. Cir. 2005), *cert. denied*, --- U.S. ---, 126 S.Ct. 1174, 163 L.Ed.2d 1141 (2006); *SanDisk Corp. v. Memorex Prods., Inc.*, 415 F.3d 1278, 1284 n. 2 (Fed.Cir.2005), *cert. denied*, --- U.S. ---, 126 S.Ct. 829, 163 L.Ed.2d 707 (2005). That is, if the claim drafter “chooses to use both the preamble and the body to define the subject matter of the claimed invention, the invention so defined, and not some other, is the one the patent protects.” *Bell Commc'ns Research, Inc. v. Vitalink Commc'ns Corp.*, 55 F.3d 615, 620 (Fed. Cir. 1995) (emphasis in original). Moreover, when the limitations in the body of the claim “rely upon and derive antecedent basis from the

preamble, then the preamble may act as a necessary component of the claimed invention.” *Eaton Corp. v. Rockwell Int’l Corp.*, 323 F.3d 1332, 1339 (Fed. Cir. 2003).

That is precisely the situation in independent claims 1 and 9 in this case. The term “UDT” derives antecedent basis from the phrase “a user-defined type (UDT) in a database system” in the preamble of claims 1 and 9. The term “a user-defined type (UDT) in the database system” appears in the body of independent claim 16.

Therefore, in order to anticipate independent claims 1, 9 and 16 under 35 USC 102(b), Bordin must teach creating a user-defined type (UDT) in a database system. Bordin does not teach or suggest such a thing. Instead, Bordin describes a re-export feature for the Ada programming language.

Thus, Bordin does not describe creating a UDT in a database system, as required in claims 1, 9, and 16. Accordingly, Bordin does not anticipate claims 1, 9, and 16. Claims 2-4, 10-13, and 17-20 all depend from one of claims 1, 9, and 16 and are patentable for at least the same reasons. Appellant respectfully requests that this rejection be reversed.

2. The Cunningham reference does not teach or suggest (a) a data dictionary, or (b) recording activated underlying operations for the UDT, as required by independent claims 6, 14, and 21.

The Office Action rejected claims 6, 14, and 21 under 35 USC 103(a) as being unpatentable over Bardin in view of United States Patent Publication 2006/0064412 (hereinafter “Cunningham”).

Appellant respectfully disagrees. Neither of the cited references teaches or suggests recording, in a data dictionary, the activated underlying operations for the UDT, as required by claims 6, 14, and 21. The Final Office Action acknowledges that Bardin does not include this element. Final Office Action at 3.

Cunningham describes mapping storage platform schemas to UDT classes in a database engine store, Cunningham at [0064], but does not hint that (a) the database engine store is a data dictionary or (b) the mapping includes a description of selected operations for a data type.

The Advisory Action admits that Cunningham does not teach that the database engine store is a data dictionary but argues that “[i]t would have been obvious to one of ordinary skill in

the art to use any recording medium including a data dictionary for easy look-up.” Appellant disagrees. Cunningham paragraph [0064] is the only reference to the “database engine store.” That term is not used or defined anywhere else in Cunningham. Without such guidance, Appellant contends that the term would not teach or suggest a data dictionary to a person of ordinary skill.

Further, the Advisory Action conceded that the “mapping” described in Cunningham paragraph [0064] does not teach or suggest recording the activated underlying operations for the UDT. The Advisory Action did not respond to that portion of Appellant’s argument.

Consequently, claims 6, 14, and 21 are not obvious in light of the Office Action’s combination of Bardin and Cunningham. Appellant respectfully requests that this rejection be reversed.

3. The Cunningham reference does not teach or suggest accepting a query including a query operator that takes one or more operands, where one or more of the operands are UDT columns, determining whether the query operator is activated for the UDT of each UDT column, and if it is, performing the operation, as required by claims 7, 15 and 22.

The Office Action rejected claims 7, 15, and 22 under 35 USC 103(a) as being unpatentable over Bardin in view Cunningham.

Neither of the cited references teaches or suggests accepting a query including a query operator that takes one or more operands, where one or more of the operands are UDT columns, determining whether the query operator is activated for the UDT of each UDT column, and if it is, performing the operation, as required by claims 7, 15 and 22. The Final Office Action acknowledged that Bardin does not include this element. Final Office Action at 4.

Cunningham does not have a need for such a feature because Cunningham does not provide for selectively activating one or more operations from an underlying UDT. If all of the query operators available from an underlying UDT are activated for a UDT, as Cunningham describes, see Cunningham at [0070] (describing “providing inheritance, in which a type can be extended with an additional method to create a new type”), there is no need to determine whether the query operator is activated for the UDT. The Final Office Action conceded this point because it did not respond to this portion of the argument.

Consequently, claims 7, 15, and 22 are not obvious in light of the Office Action's combination of Bardin and Cunningham. Appellant respectfully requests that this rejection be reversed.

Summary

In light of the foregoing, Appellant respectfully requests that the final rejection of the pending claims be reversed and the application be remanded for allowance of the pending claims, or, alternatively, that the application be remanded for further examination if appropriate references can be found by the examiner.

Appellant requests that any fees required with this submission be debited from deposit account number 50-4370.

Respectfully submitted,

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ATTORNEY FOR APPELLANT

Date: July 24, 2008

CLAIMS APPENDIX

1. A method of controlling operations that may be performed on a user-defined type (UDT) in a database system, where the UDT is derived from an underlying type having a set of underlying operations, the method including:
 - creating the UDT; and
 - selectively activating one or more underlying operations for the UDT.
2. The method of claim 1, where the UDT is a distinct data type.
3. The method of claim 1, where creating the UDT includes:
 - accepting a CREATE TYPE query including a system operators clause including an operator list including zero or more operator elements, where each operator element corresponds to an underlying operation;
 - and where activating the underlying operations includes:
 - for each operator element listed in the operator list:
 - activating the corresponding underlying operation for the UDT.
4. The method of claim 3, where the operator list includes an ALL element, and where activating the underlying operations includes activating all underlying operations for the UDT.

5. The method of claim 1, where activating the underlying operations includes:
- accepting an ALTER TYPE query including a system operators clause including an operator list including zero or more operator elements, where each operator element corresponds to an underlying operation; and
 - for each operator element listed in the operator list:
 - activating the corresponding underlying operation for the UDT.
6. The method of claim 1, where activating the underlying operations includes:
- recording, in a data dictionary, the activated underlying operations for the UDT.
7. The method of claim 1, where one or more UDT columns are adapted to store UDT values, the method including:
- accepting a query including a query operator that takes one or more operands, where one or more of the operands are UDT columns; and
 - determining whether the query operator is activated for the UDT of each UDT column, and if it is, performing the operation.
9. A computer program, stored on a tangible storage medium, for use in controlling operations that may be performed on a user-defined type (UDT) in a database system, where the UDT is derived from an underlying type having a set of underlying operations, the computer program including executable instructions that cause a computer to:
- create the UDT; and
 - selectively activate one or more underlying operations for the UDT.

10. The computer program of claim 9, where the UDT is a distinct data type.

11. The computer program of claim 9, where the executable instructions to create the UDT include executable instruction that cause the computer to:

accept a CREATE TYPE query including a system operators clause including an operator list including zero or more operator elements, where each operator element corresponds to an underlying operation;

and where the executable instructions to activate the underlying operations include executable instruction that cause the computer to:

for each operator element listed in the operator list:

activate the corresponding underlying operation for the UDT.

12. The computer program of claim 11, where the operator list includes an ALL element, and where the executable instructions to activate the underlying operations include executable instructions that cause the computer to activate all underlying operations for the UDT.

13. The computer program of claim 9, where the executable instructions to activate the zero or more operations include executable instructions that cause the computer to:

accept an ALTER TYPE query including a system operators clause including an operator list including zero or more operator elements, where each operator element corresponds to an underlying operation; and

for each operator element listed in the operator list:

activate the corresponding underlying operation for the UDT.

14. The computer program of claim 9, where the executable instructions to activate the underlying operations include executable instructions that cause the computer to:

record, in a data dictionary, the activated underlying operations for the UDT.

15. The computer program of claim 9, where one or more UDT columns are adapted to store UDT values, and where the executable instructions cause the computer to:

accept a query including a query operator that takes one or more operands, where one or more of the operands are UDT columns; and

determine whether the query operator is activated for the UDT of each UDT column, and if it is, perform the operation.

16. A database system including:
- a massively parallel processing system including:
 - one or more nodes;
 - a plurality of CPUs, each of the one or more nodes providing access to one or more CPUs;
 - a plurality of data storage facilities each of the one or more CPUs providing access to one or more data storage facilities;
 - a process for execution on the massively parallel processing system for controlling operations that may be performed on a user-defined type (UDT) in the database system, where the UDT is derived from an underlying type having a set of underlying operations, the process including:
 - creating the UDT; and
 - selectively activating one or more underlying operations for the UDT.
17. The database system of claim 16, where the UDT is a distinct data type.
18. The database system of claim 16, where creating the UDT includes:
- accepting a CREATE TYPE query including a system operators clause including an operator list including zero or more operator elements, where each operator element corresponds to an underlying operation;
 - and where activating the underlying operations includes:
 - for each operator element listed in the operator list:
 - activating the corresponding underlying operation for the UDT.

19. The database system of claim 18, where the operator list includes an ALL element, and where activating the underlying operations includes activating all underlying operations for the UDT.

20. The database system of claim 16, where activating the underlying operations includes:

accepting an ALTER TYPE query including a system operators clause including an operator list including zero or more operator elements, where each operator element corresponds to an underlying operation; and

for each operator element listed in the operator list:

activating the corresponding underlying operation for the UDT.

21. The database system of claim 16, where activating the underlying operations includes:

recording, in a data dictionary, the activated underlying operations for the UDT.

22. The database system of claim 16, where one or more UDT columns are adapted to store UDT values, the process including:

accepting a query including a query operator that takes one or more operands, where one or more of the operands are UDT columns; and

determining whether the query operator is activated for the UDT of each UDT column, and if it is, performing the operation.

EVIDENCE APPENDIX**NONE**

RELATED PROCEEDINGS APPENDIX

NONE